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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SCHLAPKOHL, WALTER	
ART UNIT	**PAPER NUMBER**
1636	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,100	ERLANDER ET AL.	
	Examiner	Art Unit	
	Walter Schlapkohl	1636	MAP

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2006 and 30 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-23,25-33,35-40,42-44,46,47,54-56,58-63 and 65-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *7-23, 25-33, 35-40, 42-44, 46-47, 54-56, 58-63 and 65-73* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of the papers filed 8/23/2006 and 9/30/2006. Claims 7-23, 25-33, 35-40, 42-44, 46-47, 54-56, 58-63 and 65-73 are pending in the instant application. The amendments, filed 8/23/2005 and 9/30/2006, have necessitated this supplemental requirement for election/restriction of an invention to be examined.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 8-11, 15-18, 20-22, 25-27, 29-31, 54, 56, 58-62 and 68-69, drawn to a method of determining the clinical outcome of a breast cancer afflicted subject and the prognosis of a ER^+ breast cancer afflicted subject comprising an assay for gene expression wherein the determination comprises the detection of a ratio of HoxB13 and IL17BR expression as the claims read on **one or one combination** of HoxB13 polynucleotide sequences selected from SEQ ID NOS: 6, 7, 10 and 11-31 and one or one combination of IL17RP

polynucleotide sequences selected from SEQ ID NOS: 1, 2, 3 and 8, classified in class 435, subclass 6.

II. Claims 8-9, 12-13, 15-17, 19-22, 25-26, 28-31, 56 and 68-69, drawn to a method of determining the clinical outcome of a breast cancer and the prognosis of a ER^+ breast cancer afflicted subject comprising an assay for gene expression wherein the determination comprises the detection of a ratio of HoxB13 and IL17BR expression, classified in class 435, subclass 7.1.

III. Claims 33, 35-36, 40, 42-43, 63, 65 and 67, drawn to a method of determining the clinical outcome of a human subject having breast cancer comprising assaying a sample of breast cells from said subject for expression of IL17BR polynucleotide(s) only as the claims read on of **one or one combination of SEQ ID NOS: 1,2,3 or 8**, classified in class 435, subclass 6.

IV. Claims 33, 37-38, 40, 46-47 and 63, drawn to a method of determining the clinical outcome of a human subject having breast cancer comprising assaying a sample of breast cells from said subject for expression of expression of IL17BR protein(s)only, classified in class 435, subclass 7.1.

V. Claims 33, 35-36, 40, 42-43, 55, 63 and 66, drawn to a method of determining the clinical outcome of a human subject having breast cancer comprising assaying a sample of breast cells from said subject for expression of HoxB13 polynucleotide(s) only, as the claims read on **one or one combination of SEQ ID NOs: 6, 7, 10 or 11-31**, classified in class 435, subclass 6.

VI. Claims 33, 37-38, 40, 46-47 and 63, drawn to a method of determining the clinical outcome of a human subject having breast cancer comprising assaying a sample of breast cells from said subject for expression of HoxB13 protein(s) only, classified in class 435, subclass 7.1.

VII. Claims 7, 14, 23, 32, 39, 44 and 70-73, drawn to a method of determining the clinical outcome of a human subject having breast cancer comprising assaying a sample of breast cells from said subject for expression of increased or decreased methylation of HoxB13, classified in class 435, subclass 7.1.

VIII. Claims 7, 14, 23, 32, 39, 44 and 70-73, drawn to a method of determining the clinical outcome of a human subject having breast cancer comprising assaying a

sample of breast cells from said subject for methylation of IL17BR, classified in class 435, subclass 7.1.

The inventions are distinct, each from the other, for the following reasons:

Groups I, III and V are comprised of multiple independent and/or distinct inventions recited in the alternative which are the products or methods drawn to different polynucleotides/polypeptides which do not render each other obvious and thus are patentably distinct. Applicant must elect a single invention which is the product or method drawn to one polynucleotide/polypeptide or one specific polynucleotide/polypeptide combination to which the claims will be restricted. Applicant must also indicate which claims are readable on the elected invention. This is not an election of species because the polynucleotides/polypeptides are different and distinct and thus the methods drawn to different and distinct polynucleotides/polypeptides are different and distinct inventions from each other.

Note: the non-standard format of this restriction, separating the inventions into multi-invention groups drawn to

independent or distinct combinations of polynucleotides and polypeptides, followed by an election of a single invention drawn to one combination of polynucleotides or polypeptides within the elected multi-invention group, was done for the sake of compactness of the communication and clarity, instead of using the more standard format setting forth each separate invention drawn to each separate sequence which would require a much longer communication.

For related process inventions, the inventions are distinct if (a) the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; (b) the inventions as claimed are not obvious variants; and (c) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function or effect. See MPEP § 802.01. The methods of Groups I, III & V and the methods of Groups II, IV and VI do not overlap in scope because the Group I, III & V inventions comprise detecting nucleic acids with, e.g., the use of quantitative PCR, whereas the Group II, IV and VI inventions comprise detecting proteins with, e.g., the use of antibodies. Furthermore, the Group I, III & V and the Group II, IV and VI inventions have a materially different design, mode of operation and/or effect since they comprise measurements

of expression levels of products which are chemically and structurally different: nucleic acid levels (Groups I, III & V) and proteins (Groups II, IV & VI). Moreover the Group I, III & V and the Group II, IV & VI inventions are not obvious variants because, for example, the detection of a protein from a sample as in Groups II, IV & VI is not an obvious variation over the amplification of copies of a nucleic acid as in Group I, II & V.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

The methods of Groups I-VI and VII-VIII do not overlap in scope because the Group I-VI inventions comprise detecting either polypeptide or polynucleotide expression levels from a

given gene or set of genes, e.g., via PCR or the use of an antibody, whereas the Group VII-VIII inventions comprise detecting methylation of either a protein or a polynucleotide via an unclaimed mechanism. Furthermore, the Group I-VI and the Group VII-VIII inventions have a materially different design, mode of operation and/or effect since they comprise measurements of products which are chemically and structurally different: nucleic acid levels (Groups I, III & V), proteins (Groups II, IV & VI) and methyl groups (Groups VII-VIII). Moreover, the Group I-VI and Group VII-VIII inventions are not obvious variants because, for example, the detection of expression of a gene as in Groups I-VI is not an obvious variation over the detection of methylation as in groups VII-VIII.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the

inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

The methods of Group VII and Group VIII do not overlap in scope because the Group VII and Group VIII inventions comprise detecting methylation of different genes with different chemical structures and different functions. Furthermore, the Group VII and Group VIII inventions have a materially different design, mode of operation and/or effect since they comprise measurements of products which are chemically and structurally different: methylation of HoxB13 (Group VII) and IL17RP (Group VIII). Moreover, the Group VII and Group VIII inventions are not obvious variants because, for example, the detection of methylation of one gene or gene expression product (HoxB13) as in Group VII is not an obvious variation over the detection of methylation of a completely separate gene or gene expression product (IL17BR) as in Group VIII.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP §

808.02), restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Inventions I and III & V and Inventions II and IV & VI are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because clinical outcome of a human subject having breast cancer can be assayed by determination of expression of HoxB13 alone, IL17BR alone or the combination (ratio) or HoxB13 and IL13BR. This is true in groups which measure expression through the use of nucleic acids (Inventions I vs. Inventions

III & V) and in groups which measure the expression through the use of polypeptides (Inventions II vs. Inventions IV & VI).

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Claims 7, 14 and 23 link inventions I and II. Claims 32 and 39 link inventions II-VI. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), claims 7, 14, 23, 32 and 39. Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be

rejoined and fully examined for patentability in accordance with 37 CFR 1.104 Claims that require all the limitations of an allowable linking claim will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Applicant(s) are advised that if any claim(s) including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. In re Ziegler, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

Certain papers related to this application may be submitted to the Art Unit 1636 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The official fax telephone number for the Group is (571) 273-8300. Note: If Applicant *does* submit a paper by fax, the original signed copy should be retained by Applicant or Applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent applications to view

the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at (800) 786-9199.

Any inquiry concerning rejections or objections in this communication or earlier communications from the examiner should be directed to Walter Schlapkohl whose telephone number is (571) 272-4439. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Remy Yucel can be reached at (571) 272-0781.

Walter A. Schlapkohl, Ph.D.
Patent Examiner
Art Unit 1636

October 15, 2006

NANCY VOGEL
PRIMARY EXAMINER